

REFLECTIONS ON THE NOSOLOGY OF THE SO-CALLED FUNCTIONAL DISEASES.*

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The authors endeavored to prove that the various so-called functional nervous disorders were primarily conditioned through the sympathetic system, and were the result of a trophic change.

DISCUSSION.

Dr. F. X. Dercum said that there was not a scintilla of evidence that the sympathetic system played the extensive role assigned to it by Drs. Collins and Fraenkel. Beginning with neurasthenia as an example, there are no grounds whatever for classifying neurasthenia among the affections of the sympathetic nerve. Neurasthenia is nothing more or less than a fatigue neurosis, and its symptoms can best be explained on the ground of a fatigue of the organism as a whole. Certainly the psychic symptoms of fatigue must be referred to the cerebrum. In what other way are we to explain the loss of power for sustained attention, the loss of spontaneity of thought, the loss of power for sustained intellectual effort? Similarly, the general motor weakness of neurasthenia must be referred to the cerebro-spinal system as a whole. All of the symptoms of this disease are symptoms of general nervous weakness and nervous irritability and not of vasomotor or sympathetic disturbances. The only indication of any role played by the sympathetic is in the vasomotor disturbances. Vasomotor weakness and irritability were long ago proven by Anjel by means of the plethysmograph, but these symptoms are merely part of a group. Much of the confusion with regard to neurasthenia arises from the fact that in neurasthenia there are two sets of symptoms—primary and secondary; the first being the essential symptoms of fatigue; the others, secondary outgrowths of these. Charcot was the first to recognize that a difference in value obtains among the various symptoms of neurasthenia. The fatigue symptoms, for instance, are readiness of exhaustion, inability for sustained intellectual or physical effort, headache, backache, limb-ache, etc., but to these symptoms are added others, such as tinnitus aurium, giddiness, throbbing and allied sensations

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which are, in all probability, to be referred to vasomotor disturbances and to rise and fall of blood pressure, but they are all of them secondary in value and not primary, and in many cases are altogether absent.

Again, as regards uric acid, Dr. Dercum said that he was one of those who did not accept the view that uric acid was a result of insufficient oxidation of the tissues. Horbaczewsky showed some years ago that protonuclein can be converted into uric acid in the laboratory. If this is true, an excess of uric acid simply means an excess of tissue waste.

As regards hysteria, Dr. Dercum said that the symptoms of the disease were such as to refer us beyond all possible doubt, not only to the cerebrospinal system, but especially to the cortex. In what other way are we to explain, for instance, the symptoms of hemianesthesia, or such a symptom as segmental anesthesia? A segmental anesthesia cannot be referred to a nerve distribution; it cannot be referred to the sensory representation in the spinal cord; it must be referred to the cortex, and there are other facts which give us every reason to believe that the representation of the limbs in the cortex is by segments. To attempt to explain hysteria by means of the sympathetic system is equivalent to offering no explanation at all.

Dr. Charles K. Mills said that many years ago he had written one of the old-time reviews of a book of several hundred pages for the *American Journal of the Medical Sciences*. This book was written by a French physician, Trumet de Fontarce, who attributed almost all the diseases referred to by Dr. Collins and Dr. Fraenkel, except perhaps acromegaly and one or two other recent affections, to the sympathetic nervous system. Dr. Mills said that if Dr. Collins and Dr. Fraenkel had not had access to that book they would find it an interesting work in connection with the subject under discussion.

Dr. Mills thought that Dr. Collins and Dr. Fraenkel had made the common mistake of attributing to a certain portion of the nervous system diseases which simply manifest themselves through this portion. They had done little more than assert that certain diseases were traceable to the sympathetic nervous system. To a certain extent the paper was a step backwards; it was a reversion to the old method of looking upon the system of gangliated nerves as a distinct system, which it is not. We have quite as much evidence in favor of designating hysteria a cerebral or psychic disease as we have in favor of designating it a disease of the sympathetic nervous system.

Dr. B. Sachs did not know whether he was one of those who enjoyed that "immunity to scientific evidence" to which the paper referred. He thought that Dr. Collins and Dr. Fraenkel had done good work in calling attention to the sympa-

thetic nervous system as a possible factor in functional diseases, but he did not think it was wise to draw too general conclusions from this. Still, we are not in entire ignorance of the functions of the sympathetic nervous system. We know that certain pupillary and visceral symptoms, as well as certain vasomotor and trophic symptoms, have their origin there. He did not think the writers of the paper would be able to prove that such symptoms occurred more frequently in hysteria or neurasthenia or acromegaly than they do in diseases which we positively know are of cerebrospinal origin.

Dr. William Osler regarded the bringing forward of this old, defunct theory as a very retrograde step. Still, he said, it only goes to show that we think the same thoughts our fathers thought.

Dr. W. L. Worcester believed the paper was open to objection on theoretical grounds. It was generally acknowledged by students of evolutionary processes that those structures which were latest developed were the most liable to disorder. The sympathetic nervous system is a more primitive portion of the nervous system than the cerebrospinal system; it is mainly concerned with the regulation of the circulation and secretion. When we have to deal with a disorder of the cerebrospinal system, he thought it less reasonable that we should search for the cause of such disorder in the fundamental and simple sympathetic system than in its own and less primitive structure.

Dr. Van Gieson said that while he agreed with Dr. Osler that many of the statements contained in the paper of Dr. Collins and Dr. Fraenkel had been said before, he thought it was necessary, from time to time, to say them over again. While it was very true that the higher parts of the nervous system were evolved last, it was also true that they are most dependent upon a continuous food supply. The authors of this paper had attempted to show that in certain diseases there are changes in the higher spheres of the nervous system produced by functional or organic changes in the sympathetic system, which have deprived those higher centers of their food supply.

Dr. J. J. Putnam did not regard the sympathetic system as an essential factor in the causation of disease, but looked upon it as a very important factor in the maintenance of certain diseased conditions. In Graves' disease, for example, the onset may be due to a fright, which is in the first instance purely psychic; the symptoms it produces are taken up by the sympathetic system, and if this system becomes seriously involved those symptoms are not easily recovered from, and form an essential part of the disorder.

Dr. Collins said he was fully prepared for the criticisms that had been made by the various speakers on the paper which

he and Dr. Fraenkel had just presented. He felt moderately confident that the theory which they had advanced did not rest upon mere assertions, but that it was supported by tangible scientific evidence. If he were as capable as Dr. Dercum of making lucid his thoughts he could wish for no better words to maintain the position that he and Dr. Fraenkel had taken, relative to neurasthenia in its relation to the sympathetic nervous system, than those employed by that speaker. They did not claim in their paper that neurasthenia was a disease of the gangliated cords, of the communicating fibers, of the terminal ramifications, or of any other part of the sympathetic system; on the contrary, they distinctly stated their belief that the symptoms of neurasthenia were primarily conditioned by the sympathetic system, and that they were the result of a nutritional change. Dr. Dercum said he believed that certain symptoms of neurasthenia were due to changes in the blood pressure, and to that extent, at least, he agreed with the authors of the paper. How are these variations in blood pressure brought about? Does the cerebrospinal system send any filaments to the blood vessels?

In reply to Dr. Sachs, the speaker said he had recently made some experimental researches, together with Dr. Onuf, on the localization of the sympathetic nerve in the brain and spinal cord. The result of these researches, which were to be read later by Dr. Onuf, easily explained that the implication of the sympathetic system was responsible for the symptoms of sympathetic disorder occurring in the course of cerebrospinal disease.

Dr. Collins said they did not wish to contend that the diseases mentioned were diseases of the sympathetic system. They had merely advanced the claim that these diseases are more legitimately interpreted by positing disorder in function or disease of the sympathetic nervous system, as the *sine qua non* of their existence, than by any other explanation, be it chemical, reflex or anatomical. They maintained that the diseases were nutritional diseases, and that the sympathetic nervous system controls nutrition from beginning to end. Dr. Osler had pronounced their theory a retrograde one. He would ask Dr. Osler to supply him with a better one.

Dr. Collins said that while their views on rheumatism and gout might be termed retrograde, *chacun son gout*; he considered them more satisfactory than any that had been brought forward, even though the French author to whom Dr. Mills referred had written so voluminously and unconvincingly about them.